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Grameen Bank Evaluation Project

IMPACT OF GRAMEEN BANK OPERATIONS ON THE LEVEL, COMPOSITION AND DISTRIBUTION OF INCOME AND EXPENDITURE OF THE RURAL POOR

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ABSTRACT

Grameen Bank operations have made substantial impact on the level of income of the rural poor. The per capita income of an average GB loanee was found to be about 59 percent higher in 1985 compared to that in 1982. The level of income of GB loanees varied directly with the size of the loan and the number of times of loan disbursement. GB operations have made positive impacts on the wage and employment situation of the poor, enhanced the level of their capital accumulation, substituted private loans with GB loans and reduced unproductive expenditure by making people more consious. Although substantial portion of the income still goes to food items, there has been a significant rise in the productive investment, thereby creating an increased productive capacity of the rural poor. Increase in the level of income of the rural poor has set in motion certain forces which enhanced the demand for not only the goods produced by GB loanees but also by others. However, one should not overemplasize the potential for non-farm sector. It cannot be an alternative to agricultural growth.

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LIST OF CONTENTS

LIST OF TABLES

Tables (contd.)

IMPACT OF GRAMEEN BANK OPERATIONS ON THE LEVEL, COMPOSITION AND DISTRIBUTION OF INCOME AND EXPENDITURE OF THE RURAL POOR

1. Introduction:

One of the fundamental objectives of Grameen Bank is to attack the problem of low income of the rural poor. Since the target groups of Grameen Bank constitute the most poverty ridden section of the rural population[1], it is argued that GB operations, by raising their level of income, would also turn the income distribution in the rural areas gradually in favour of them. A secondary objective of the supervised credit operations of Grameen Bank is to channelize incremental income into desired pattern of expenditure. More specifically, GB makes efforts to channelize surplus income into productive off-farm investment so that the initial growth of income (if any) is sustained. A resultant outcome of such a credit operations is likely to make substantial impact on the standard of living i.e. expenditure on clothing, health, nutrition, education and housing. However, there is an undercurrent of apprehensions regarding the long-run viability of such a programme arising out of the demand constraints. It is argued by some that the GB credit operations will ultimately confront the problem of saturation of market thus putting a limit to the expansion of GB. However, initial investigation into the demand and marketing aspects of GB by atleast two researchers[2] tend to refute such apprehensions. They argue that demand is

not a static concept and hence gets a dynamic boost once level of income of a group of rural population enhances.

The main objectives of the present paper are to look into the following specific issues related to patterns of income and expenditure of the rural poor:

a. Impact of GB on the level of income of the clientele groups over time and in comparison to similar persons not within the fold of GB operations (i.e. control groups).

b. Factors contributing to the growth of income -- more specifically to identify if following things were taking place or not:

   i. generation of additional employment through GB activities and rise in real wage

   ii. increase in the capital accumulation and rise in the returns to investment

   iii. substitution of private loans with GB loans

   iv. reduction in unproductive expenditure.

c. Distribution of the incremental income into desired pattern of expenditure -- how far the clientele groups channelize the surplus income into productive off-farm investment and how far they allocate it for enhancing the quality of life which ultimately pays off them in terms of their increased productive capacity.

d. Demand and marketing issues related to GB operations. In particular, to look into validity of the hypothesis that expansion of GB would only increase supply of goods and services in rural areas without corresponding expansion of demand. Concomitantly, a time would come when there will be little demand for goods, putting downward pressure on price and profitability.

Earlier studies, as already pointed out, have dealt with some of these issues, though not always so elaborately. The aim of this paper is to reemphasize some of those findings with the help of an extended data base generated through a fresh field study.

2. Methodology:

2.1 The conceptual framework:

Conceptually, the impact of GB operations on the level of income of the loanee households can be assessed in two ways:

a. Firstly, the levels of income of the loanee households before and after they came under GB operations could be compared. This could be supplemented by information on expenditure pattern and their composition.

b. Secondly, comparison could be made between the levels of income of the target group households who actually received the loan and utilized it and control group

households who are eligible to take GB faciliti
but did not (or could not) receive them for som
reasons.

Similarly, objectives 'b' and 'c' may be verified
the help of information collected from the sample house
Objective 'd', however, needs to be established through s
quantitative exercises, especially by finding out the R
ssion co-efficients of some selected Expenditure Functi

2.2 The survey design:

This part of the study is based on household level
collected though field surveys during June to October 1
A multi-stage sampling procedure was followed for the s
Initially 20 per cent of the bank branches which have b
operating for more than three years and ten percent of
operating for one to less than three years were randoml
ted. Thus a total of 15 branches were selected. We sele
five branches out of these fifteen branches randomly fo
intensive study. Again one village from each of these b
was purposedly selected. It may be mentioned that this
the village where from one male centre and one female ce
were selected for the credit survey. A general socio-ec
census was conducted in each of these villages. Informa
landholding (both ownership and operational), occupatio
pattern of all the earning members of each household of
village was collected through this census. A similar ce

was conducted in two control villages to compare the socio-economic status of the GB loanees with those of similar status (owning less than half an acre of land) but having no access to GB loans. The control villages were selected such that they resemble the project villages in terms of physical characteristics and landownership/occupational pattern. Households from these seven villages (five GB villages + two control villages) were stratified according to four landholding groups [(i)0-.50 acres, (ii) .51 to 2.00 acres, (iii) 2.01 to 5.00 acres and (iv) 5.01 acres & above] and three occupational groups ((i) cultivation, (ii) trade and (iii) other non-agricultural occupations).

Then 40 households (except in one village, where there was one missing case) were randomly selected from each village on the basis of stratified random sampling where sample from each strata was represented in proportion to its size (see table 2.1 for the list of the villages). Out of 200 households from five project villages, there were 69 GB members and 68 non-members with less than half an acre of land owned. Of the control villages, there were 63 households who happened to own less than half an acre of land.

2.3 Socio-economic characteristics of the sample households

This section gives a brief description of the basic socio-economic characteristics of the households investigated available from the census conducted on them. Table 2.2 gives

Table 2.1

Name and status of the selected villages

Name of the villages	Status	Number of sample household		
		GB members	Non-members	Total
1. Durgapur, branch: Shatibari,Mithapukur Rangpur	GB village	9	16	25
2. Kismat Gopalpur branch: Badiakhali, Gaibanda, Rangpur	GB village	13	11	24
3. Kabilapara branch:Rakkhit Belta Tangail	GB village	16	18	34
4. Ghatandi branch: Ghatandi, Bhuapur, Tangail	GB village	14	10	24
5. Malipara branch:Bhawal Rajabari, Sreepur, Dhaka.	GB village	17	13	30
6. Tajurpara Upazila: Mithapukur Rangpur	Control village	NA	31	31
7. Karatipara Upazila: Tangail Sadar, Tangail	Control village	NA	32	32

the comparative picture of the sample households in terms of household size, land owned and operated, sex composition, working members etc. It is seen from the table that the figures of the households from control villages, though not exactly similar to the project areas, closely resemble them in many ways.

Table 2.2

Socio-economic characteristics of GB loanees: 1985

Characteristics	Project Area		Control Area Target Group
	GB members (N= 69)	Non members (N= 68)	(N= 63)
1. Household size	5.14	4.9	5.03
2. Land owned (in acres)	.2501	.4184	.3673
3. Land cultivated (in acres)	.3671	.3507	.2768
4. Land rented in (in acres)	.2414	.2310	.2013
5. Land rented out (in acres)	.0075	.1544	.3325
6. Adult Male (No.)	1.57	1.46	1.59
7. Adult Female (No.)	1.41	1.37	1.33
8. Total working members (Male)	1.59	1.40	1.43
9. Total working members (Female)	.50	.21	.24

Source: Survey of loanee households, 1985.

3. FIELD WORK FINDINGS: IMPACT OF GB CREDIT ON THE LEVEL OF INCOME OF THE RURAL POOR

3.1 Level of income of GB loanees compared to Non-members and Control Groups

That GB credit has made substantial impact on the level of income of the GB loanees compared to others of similar socio-economic background both within the project areas and the control areas is reconfirmed by our latest round of survey As can be seen from table 3.1, the yearly per capita income of GB loanees is significantly higher than those of comparable households both in the project and control areas. On average a GB member is found to have nearly 15 per cent higher per capita income than the non-members of the project villages and 33 per cent higher than the comparable households of the control villages. The differences in per capita income between GB members and others have also been found to be statistically significant.

Now the question may arise whether this higher per capita income of GB members is due to GB financed activities or due to other reasons. The information furnished in the table clearly reveal that higher per capita income of GB members compared to non-members in project and control villages stem overwhelmingly from industrial activities, business, construction and transport services. These are precisely the major non-farm activities financed by the GB credit. On the other

hand non-loanee households (owning upto 0.5 acres of land) are traditionally dependent on wage income from other sources of livelihood. This fact is adequately reflected in the table which shows higher wage and income from other sources for the non-members in both control and project areas.

To sum up, evidence from table 3.1 shows conclusively that GB credit financed activities which enabled the loanee households to raise their income generating capacity out of those activities compared to non-members both in project and control areas who did not have commensurable access to institutional credit. The table also indicates that the growth in the level of income of GB loanees is not exactly at the expense of other poor of the project villages. The non-members of the project areas have per capita income which is at least 21 per cent higher than that of the comparable households in the control villages.

Besides the differences in the average per capita income for the three types of sample households, we have been able to construct tables which show the percent of loanees corresponding to each level of annual per household income. As shown in table 3.2, the overwhelming portion of the loanees (nearly 85%) belonged to the household category having yearly income of Tk.10,000 and above. Among them, households with yearly income of Tk.16,000 and above constituted about 43 per cent of the total loanees. Thus loanee households on average had very high income - certainly higher than those of non-loanee households in project and control villages.

Table 3-1

The level and Structure of Household Income for GB Members and Comparable Non-participant Groups

(Figures in Tk. per household)

Components of Income	Grameen Bank Members (Group 1)	Target Group Non-participants		Percent difference	
		Project village (Group 2)	Control village (Group 3)	Group 1 over Group 2	Group 1 over Group 3
Agriculture:	5,606	5,322	6,577	5.3	-14.8
Crop cultivation	2,782	2,199	2,312	26.5	20.3
Kitchen garden	512	305	567	67.9	-9.7
Livestock and fishery	941	788	928	19.4	1.4
Agricultural wage labour	1,371	2,031	2,770	-32.5	-50.6
Non-agriculture	12,527	8,880	5,539	41.1	126.2
Processing & manufacturing	4,355	2,753	1,119	58.2	289.2
Trade	3,859	2,234	1,369	72.7	181.9
Transport services	1,352	572	735	136.4	83.9
Non-agricultural wage labour	670	826	738	-18.9	-9.2
Other non-agriculture (with work, and self-services)	2,292	2,496	2,158	-8.2	6.2
Household income	18,133	14,202	12,116	27.6	49.7
Percapita Income	3,524	2,900	2,523	21.5	39.7

Source: Indepth household survey in project and control villages

Since many of the loanee hous holds surveyed have been members of GB for more than one year it is plausible to assume that it was high return from the GB credit which enabled them to augment their level of income. Not only this, the high level of income also implied their higher repayment capacity which made it possible for them to take loan again. Since GB has been operating for several years in the survey areas this hypothesis is likely to have substantial validity. Thus if we compare the per capita income of Hossain's sample (1982) with that of ours in 1982's constant prices we find a substantial difference. At the time of 1982 survey the per capita income of GB loanees was Tk. 1762 in current prices, which increased to Tk. 2713 in 1982's price -- a real increase of about 59% within a span of only three years.

Table 3.2

Level and distribution of income for GB members, 1985

Level of income (Tk per annum)	Per cent of total loanee	Average family income	Average family size	Per capita income
Upto Tk. 6,000/-	2.90	5,600	5.3	1077.0
6,000 - 8,000	7.25	7,235	4.2	1722.6
8,000 - 10,000	4.35	8,633	4.3	1989.0
10,000 - 12,000	16.00	11,024	4.4	2516.9
12,000 - 14,000	11.00	13,051	5.0	2610.2
14,000 - 16,000	15.5	16,531	5.2	3179.0
Above 16,000	43.00	20,804	4.8	4334.2
All households	(100.00)	14,107	5.1	2766.0

3.2 Level of income by size of loan

It may be hypothesized that size of loan taken from the GB is a major determinant of per capita income of GB members. As evidenced in table 3.3, there is close correspondence between size of loan and average household income with some variations. As expected the relationship is positive with co-efficient of correlation (r) being 0.68.

Table 3.3

Per capita income by size of loan taken by villages (consolidated 5 villages)

Size of loan (Tk.)	Average H.H. income (Tk/annum)	Average family size (persons)	Average per-capita income (Tk/annum)
1000 - 1500	14858	4.60	3230
1501 - 2000	14629	5.15	2839
2001 - 2500	23429	5.10	4594
2501- 3000	17527	5.25	3338
3001 - 3500	20544	4.75	4325
3501 - 4000	13059	5.25	2487
4001 - 4500	17802	4.50	3956
4501 - 5000	20816	6.00	3469
Above 5000	25256	6.25	4041
Loan not taken	9980	4.50	2218

3.3 Level of income and age of membership of GB loanees

On a priori ground there are strong reasons to believe that income earning capacity of the loanees depend directly on the number of times a loanee has taken loan from GB. Since in general one year is the repayment period for a loan taken from GB, the average household income is expected to vary directly with the age of membership. This is clearly borne out by the evidence shown in table 3.4. There is strong positive relationship between age of membership and average size of household income. There is, however, one exception. The average level of household income of the GB loanees at the end of the fourth year was somewhat lower than that in the third year. This may be due to some adverse factors which influenced the rate of return earned out of GB credit financed activities for some particular GB loanees. In general, it is reasonable to believe that with the age of membership the experience gained in utilizing the loans in productive activities increases considerably. The table shows that the per capita income of the 5th time loanees is 40 percent higher than those of first time loanees. Average per capita income rather than average household income may be more relevant indicator because the loanees very often engage all the members of the households in the economic activities financed out of GB credit.

It must, however, be remembered that availability of GB credit is only one among various factors that in general determine the average income of a household. Factors like land owned, value of non-land fixed assets, number of working hands in the family, level of education of the members of the family, access to other kinds of resources all exert significant influence on family income. However, since GB members constitute the poorest section of the rural population with virtually no land or asset of their own and having very low level of education, the access to institutional credit exert overwhelming influence on the level and changes in family income.

Table 3.4

Level of income by age of membership with Grameen Bank - 1985

Number of times loan taken from GB	Average H.H. income (Tk/annum)	Average family size	Average per capita income (Tk./annum)
1st time	13491	4.75	2840
2nd time	18699	5.50	3400
3rd time	19797	5.76	3434
4th time	15362	5.25	2926
5th time	23571	5.88	4012

4. Growth of income: Causal Factors

Having observed that GB credit operations enabled the members to enjoy higher income and expenditure levels compare to non-members it is pertinent to ask the question what are the factors that contributed to this growth in income. Unemployment and underemployment is endemic in rural Bangladesh. Credit channelised through G.B. enable the members to get engaged in gainful self-employed activities. The immediate impact in GB operations could be thus increase in employment in the operations area. A secondary impact is wage rate of labourers due to rise in labour demand. Thus higher level of employment & wage rate can both contribute to higher income of the loanee households. In addition to that credit induced additional investmen and capital accumulation may also angment the asset income of the loanee households. Finally access to GB credit (at institutionally determined interest cost) is likely to make substitution of private loans (with high interest rate) with GB loans a widespread phenomenon in the operation areas. This makes possible to reduce the debt burden of the poor rural households, thus indirectly contributing to rise in income levels.

What follows is a systematic attempt to look at each of the aspect of the causal factor with the help of empirical evidence.

4.1 Wage and Employment:

Direct evidence of the impact of GB operations on the agregate employment level in rural areas is not available. But we have ample indirect evidence that GB credit contributed to rise in employment of hither to unemployed members of the loanee households. Table 4.1 compares the number of workers and activity ratio for loanee households with that of non loanees households. It is evident average number of workers both male and female is consistently higher for loanee households than that of non loanee households. The fact that GB member have a slightly higher average family size doesn't really explain this as 'activity ratio' (defined as the ratio of average number of workers in a family to the size of a family) is also substantially higher for GB members compare to non-members. In the absence of contrary evidence it is reasonable to infer that it was GB credit which enable the greater number of members of the GB loanee households to get engaged in gainful employment of some kind or other. What is significant in the empirical evidence provided in the table 4.1 is the fact that GB contributed greatly to the increase in female participation in the labour force. As the table shows average no. of female workers in a GB households in more than double than that of non GB household. For male workers however the difference is little over ten percent. The fact that proportion of female workers in the work force of loanee households has also increased in most sectors of economic activity is also apparent from the

evidence provided in Table 4.2. Excepting nonfarm agriculture (e.g. (e.g.livestock & fisheries), female participation in the labour force of GB households registered substantial increase over time in GB financed economic activities like cottage industries, trade & shopkeeping, other services.

The fact that GB operations led to substantial increase in wage rate in the concerned areas is also clear from the figures shown in Table 4.3. Wage rates in all seasons - pick, slack or normal increased substantially (ranging from lowest 55 percent to highest 80 percent) after the establishment of GB. Admittedly this rise in wage rate do not only benefit GB members who are also wage worker but also great no. of non GB members (through increased income) who sell their labour power for earning their livelihood.

Table 4.1

Number of workers and activity ratio for loanee households compared to nonmembers (1985)

Groups of households	Average no. of workers			Average family size	Activity ratio
	Male	Female	Total		
GB members	1.57	0.49	2.06	5.14	0.40
GB nonmembers	1.40	0.21	1.60	4.90	0.33

Source: Survey on socio-economic characteristics in GB areas - 1985.

Table 4.2

Distribution of workers employed in different sectors by sex

Sectors	1982					1985				
	No. of house-hold	Average no. of workers	Average no. of male workers	Average no. of female workers	Female worker as % of all workers	No. of house-holds	Average no. of workers	Average no. of male workers	Average no. of female workers	Female workers as % of all workers
1. Non-farm agriculture	103	1.57	1.29	0.28	(18.1)	04	1.75	1.5	0.25	(14.3)
2. Cottage industries	203	2.09	1.29	0.80	(38.2)	20	2.07	1.23	0.84	(40.3)
3. Trade & shopkeeping	249	1.62	1.35	0.27	(16.5)	26	1.89	1.38	0.51	(26.9)
4. Transport	54	1.43	1.30	0.13	(9.1)	12	1.83	1.41	0.42	(22.9)
5. Others	nil	nil	nil	nil	nil	02	1.5	1.0	0.50	(33.33)
All sectors	609	1.75	1.32	0.43	(24.8)	64	1.94	1.35	0.59	(30.4)

Source: Hossain M. (1982)
Survey of GB Households (1985).

Table 4.3

Changes in Agri-wages (Tk.) after Establishment of Grameen Bank by Seasons by villages.

Villages:	Seasons/ period	Pick		Slack		Normal	
		With meal	With-out meal	With meal	With-out meal	With meal	Without meal
Durgapur	Before GB estab. (1985)	n.a	19.76	n.a	15.20	n.a	18.24
	At present (1985)	n.a	30.00	n.a	20.00	n.a.	25.00
	Percentage rise	-	.52	-	.32	-	.37
Kismat-Gopalpur	Before GB Estb. (1980)	13.18	19.76	n.a	15.20	12.16	16.72
	At present (1985)	20.00	29.00	15.00	20.00	19.00	24.00
	Percentage rise	.52	.47	-	.32	.56	.44
Malipara	Before GB Estab. (1982)	13.60	20.80	13.60	10.80	16.32	
	At present (1985)	20.00	30.00	10.00	15.00	18.00	25.00
	Percentage rise.	.47	.47	.47	.10	.67	.53
Ghatandi	Before GB Estab. (1982)	16.30	24.45	11.41	16.30	8.15	24.45
	At present (1985)	19.00	30.00	13.00	21.00	15.00	25.00
	Percentage rise.	.17	.23	.14	.29	.84	.02
Kabilapara	Before GB Estab. (1982)	21.40	21.08	13.04	19.56	16.30	22.82
	At present (1985)	24.00	29.00	16.00	20.00	29.00	24.00
	Percentage rise.	.10	.38	.23	.02	.78	.05

Note: All values are expressed at 1985 constant prices.

Source: Field Survey.

4.2 Accumulation of Capital

It is very often argued that a one shot rise in income of the rural poor may not sustain itself unless a substantial part of the incremental income is channelised into savings and productive investment leading to accumulation of capital and income generating capacity. We therefore made an attempt to look at the comparative investment behaviour of the GB members and nonmembers. The findings are shown in Table 4.4. It is crystal clear that GB members not only invest more than non GB members in project and control villages, but the percentage difference is substantial. Whereas for agricultural capital the % difference is more than 70 percent for non-agricultural capital it is over 39 percent making the total % difference somewhat around 62 percent. This is really encouraging from long run point of view. With this if we bring the fact that proportion of investment in total expenditure is nearly 20 percent (Table 2.5) and the ratio is increasing over time, we can't but conclude that capital accumulation was a great contributing force to the growth (and sustainance) of income for GB households. This is more so because there is no evidence that returns from new investment has decreased over time.

4.3 Substitution of private loans with GB loans

We have no direct information regarding this aspect of the GB credit operation. But findings of similar study by Rahman (1986)[3] and Gai (1984)[4] clearly indicate that the substitution has been proceeding at a fairly rapid pace.

4.4 Reduction in unproductive expenditure

Expenditure on downy has been greatly reduced due to GB intervention. Though we donot have any quantitative estimate on it but qualitative information are prenty to support this statement (See for example Rahman[5], GBRP Working Paper 3, 1986 and various issues of 'Udaog', the informal journal of GB).

Table 4.4

Accumulation of capital by GB loanees (1985)

Stocks & Flows of Capital (Value in Tk/annum)	Project villages		Control village	% difference	
	GB members	GB Non-members		Members over non-members	Members over control groups
A. Agricultural Capital:					
Total stock	2873.0	2128.0	2566.5	25.9	10.7
Investment	1842.9	489.0	332.7	73.5	81.9
B. Nonagricultural Capital:					
Total stocks	2527.6	762.0	2051.5	69.8	18.8
Investment	1646.1	830.0	988.3	49.6	39.9
C. All Capital:					
Total stocks	5400.0	2890.0	4618.0	46.5	14.5
Investments	3489.0	1319.0	1321.0	62.2	62.1

Investment =acquisition of fixed capital in the last year.

Values refer to current market price.

Sources: Expenditure survey of loanee households 1986.

5. Distribution of income into desired pattern of expenditure

5.1 Expenditure Profile of Sample households

We begin with an overview of budget share of different categories of commodities on which rural poor have incurred expenditure. Table 5.1 presents the structure of household expenditure of the sample households. One prominent feature of the information is that still now nearly 60 percent of expenditure is incrurred on food items. Other basic needs like clothing, housing, health and education have a desirably low budget share (around 10 percent of total expenditure) indicating a poor status of the average GB loanees. Table also indicates that there is a substantial difference in the level of expenditure incurred on clothing, housing, health & education between GB loanees and the rest of the sample. This is clearly an indication of a higher level of standards of living of the GB loanees (more on this later).

Another interesting feature is that expenditure on investment goods constitutes a sizeable proportion of total expenditure (19 percent for GB loanees compared to 8 to 10 percent for the rest of the sample). It indicates a very encouraging positive sign perhaps reflecting high saving behaviour of the GB loanees.

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Table 5.1

Structure of household expenditure (1985)
(All values are expressed at constant 1985 prices)

Product/ Expenditure group	Project Villages		Target group in control villages	% difference	
	GB members	Non-GB members		GB members over non-members	Members over control groups
1. Cereal food	7128.5 (39.15)	6449.5 (42.58)	5250.8 (42.68)	09.5	26.3
2. Noncereal food	2972.5 (16.32)	2705.1 (17.86)	2072.7 (16.85)	08.99	30.3
3. Other hh. expenses (including daily necessities)	2016.7 (11.06)	2031.7 (13.41)	1726.0 (14.02)	-0.74	14.4
4. Clothing	876.2 (4.8)	764.2 (5.04)	659.9 (5.36)	12.8	24.7
5. Housing	800.0 (4.39)	487.0 (3.21)	331.2 (1.96)	39.1	58.6
6. Health, education & transport	468.9 (3.57)	310.2 (2.04)	274.1 (2.95)	33.8	41.5
7. Investment Expenditure	3489.0 (19.16)	1319.0 (8.7)	1321.0 (10.74)	62.2	102.1
8. Transfers	454.2 (2.49)	1078.5 (7.12)	666.3 (5.42)	-137.4	-16.7
Total	18206.0 (100.0)	15145.0 (100.0)	12302.0 (100.0)	18.46	32.42

N.B.: Figures in the parentheses show % of total expenditure

Source: Expenditure survey of GB loanee households, 1985.

Having looked at the aggregative expenditure pattern of GB loanees, it is imperative to see whether there is any significant difference in expenditure pattern of different income classes constituting the loanees. The loanee households have been classified into 3 groups: (a) Households with per capita income up to Tk.3000/- per annum have been termed as extreme poor. They constitute roughly 60 percent of the population. (b) Households having per capita income between Tk.3000/- to Tk. 4500/- constituted the middle 30 percent of the population and has been termed as poor, (C) The top 10 percent of the population with per capita income above Tk.4500/- comprise the nonpoor households.

Table 5.2 shows budget shares of different groups of commodities for different income groups. As expected budget share of food items is higher for low income groups than that for high income groups. Whereas for entreme poor staple food takes away about half of the family budget, for the top 10 percent of the income hierarchy the share is only about one-third of the total budget. This, however, is not true of non cereal food which includes items like meat, fish, pulses; milk, vegetables, fruits etc. As income rises people tend to spend more on those items, partly as a substitute for staple food but more importantly due to their high nutritional value. Thus budget share of non cereal food show little variation across income groups meaning that high income families spend more of their income on those items in absolute terms, than the low income households.

Table 5.2

Pattern of expenditure - loanee households (1985)

Heads of expenditure	Income group (by per capita income)			All households
	Extreme poor (Bottom 50%)	Poor (Middle 30%)	Non poor (Top 10%)	
1. Cereal food	51.0	46.1	35.8	45.8
2. Non cereal food	14.1	15.3	16.2	15.4
3. Other daily necessities	7.0	7.3	8.5	7.5
4. Clothing & household apparels	.1	8.9	11.0	9.8
5. Housing	3.4	4.5	5.6	4.4
6. Education, health & transport	2.1	2.4	2.7	2.3
7. Investment exp.	9.4	12.8	19.5	12.1
8. Transfer	4.9	2.7	0.7	2.4
	(100.0)	(100.0)	(100.0)	100.0

Note: A. Extreme Poor: Households with per capita income less than Tk. 2000/-

B. Poor: Poor Households with per capita annual income between Tk.3000/- to Tk.4500/-

C. Nonpoor: Households with per capita income above Tk. 4500/-

Source: Same as Table 5.1: 1 (but coverage different).

Another notable feature of the expenditure pattern is the fact that there is significant difference in proportionate expenditure going to investment across the income groups. Where as for the extreme poor the share is 9.4 percent for the nonpoor, the share is as high as nearly 20 percent of total expenditure. Finally variation in budget shares on transfer expenditure is perhaps due to the varying extent of indebtedness (and nature of financial transactions undertaken) of the different income groups.

5.2 Impact on the Standards of Living

As mentioned earlier sustained improvement in the living standards of these loanee households is the ultimate goal of the GB credit operations. Contrary to the conventional notion, increase in the consumption expenditure on the basic needs items for the rural poor is likely to be directly productive as it greatly enhances productivity of individuals. For our purpose we have included the following items namely, clothing, housing, health, education and transport in the basic needs consumption baskets of the rural poor. Expenditure on transport is classified as basic needs largely because it is complementary to other expenditures and it greatly enhances mobility of the rural poor. While studying standard of living, expenditure on food, has been excluded because impact of GB operations on food and nutrition status of rural poor constitute a separate study (Rahman, GBRP working paper 7, 1986).[6]

The findings of the study is reported in the Tables 5.3, 5.4 and 5.5. Three conclusions come out prominently from the informations. First expenditure by loanee households on these 5 items of basic needs have increased considerably over time. Second, living standard measured by expenditure on basic needs items is higher for loanee households than nonloanee households indicating that it was GB credit operations which provided the stimulus to increased expenditure. Thirdly, it is found that by and large basic needs expenditure increases with the age of membership with GB.

Table 5.3 provides a comparative picture of average expenditure levels on Non food Basic Needs by GB members in 1982 and 1985. Even though the two studies in 1982 and 1985 are not directly comparable due to differences in coverage and scope of the studies, we can nevertheless draw some broad inferences from the results of the two studies. Figures in the table reveal that average level of expenditure on all the items of nonfood basic needs have increased over time. Expenditure on housing & education registered highest growth rate. The fact that average expenditure on health have not increased much is perhaps attributable to the differences in coverage. The 1985 study didn't collect information on all items of expenditure on health. The most notable aspect of the comparative picture is that percentage of households incurring expenses on basic need items have increased unambigously. Whereas for clothing the increase is from 82.9 percent in 1982 to nearly 100 percent in 1985, for

education it is from 29.8 percent to 80.4 percent. No such data is available for Transport head for 1982. Similar increase is observable for Health & Housing items. This is undoubtedly the greatest achievement of GB credit operations. It has not only been instrumental in raising average level of basic needs expenditure of loanee households, but also effectively raised the Number of households in rural areas incurring such expenses.

Table 5.3

Average expenditure on Non-food Basic Needs by GB members, 1982 and 1985

Indicators	* GB members 1982		GB members 1985		
	Average spending Tk/annum	% of households incurring expenses	Average spending Tk/annum	% of households incurring expenses	Annual % Increase in expenditure
1. Clothing	817.6	(82.9)	876.2	(100.0)	.07
2. Housing	501.6	(74.0)	675.0	(88.12)	.35
3. Health	340.8	(84.5)	345.0	(94.2)	.01
4. Education	51.6	(29.8)	121.4	(80.4)	1.35
5. Transport	n.a	n.a	97.5	(98.6)	-

* All values have been expressed at 1985 constant prices using consumer price index for rural areas.

Source: a) Hossain M. (1982)
b) Expenditure Survey of Loanee Households, 1985, GBEP, BIDS

Table 5.4 compares expenditure of Nonfood Basic Needs by GB members with that by nonmembers. It has been found that by and large GB members spend more on all the items of basic needs than non GB members. The percentage difference in expenditure is highest for education followed by that of Housing, Health and Clothing and Transport. One can thus sefely infer that it was GB induced credit operations that made this higher level of basic needs expenditure possible.

Table 5.4

Expenditure of Nonfood Basic Needs GB members compared with nonmembers, 1985

(Values at 1985 prices)

Indicators	GB members		Non GB members		% difference in expenditure members over nonmembers
	Average Expenditure (Tk/ annum)	% of households incurring expenses	Average Expenditure (Tk/ annum)	% of house holds incurring expenses	
1. Clothing	876.2	(100.0)	764.2	(100.0)	12.8
2. Housing	675.0	(88.12)	487.0	(66.18)	39.1
3. Health	345.0	(94.2)	156.0	(88.24)	37.6
4. Education	121.4	(80.4)	62.4	(50.2)	48.6
5. Transport	97.5	(98.0)	91.8	(93.5)	05.8
	2145.1		1561.4		27.2

Source: Same as table : 5.3

Table 5.5

Expenditure on Non food-Basic Needs by age of Membership with GB, 1985

(All values at 1985 current prices)

	1 year	2 years	3 years	4 years
1. Clothing	620.5	730.8	850.2	902.6
2. Housing	345.2	529.0	781.0	932.0
3. Health	201.0	309.5	352.8	410.5
4. Education	80.5	90.3	117.8	131.2
5. Transport	12.1	80.3	102.3	118.6

Source: (Same as others.)

Finally, Table 5.5 depicts low level of basic needs expenditure changes with the age of membership. The trend is quite evident -- there is strong positive correlation between the age of GB membership and level of annual expenditure on non food basic needs items. This can be explained in the following manner -- higher the age of GB membership higher is the per capita household income which enable the households to spend more of their income on basic needs items.

6. Demand Constraints

Credit channelised through GB finances non-farm activities in rural areas. This financial intermediation enables the GB members who are engaged in very small-scale economic activities in rural areas to augment the production of non-farm goods and services. Now as the scale of credit operation by GB increases, the constraints on the demand side may put a limit on success of GB financed activities. It is argued that, in rural Bangladesh where the per capita income of people is very low, the size of the market for non-farm goods & services is very small. Perhaps more important is the fact that as income rises people would tend to substitute rural cottage industry products for products produced in modern sector or even goods imported from abroad. It is only the extreme poor looking for cheaper goods who consume most of rural cottage industry products.

6.1 The hypotheses:

Thus it is hypothesized that expansion of credit operations through GB would only increase supply of goods and services in rural areas without corresponding expansion of demand. A time would then come when there will be little demand for goods putting downward pressure on price and profitability.

Alternatively, it could be argued that extensive interventions in rural area like GB credit operations would result in sustained rise in rural income. And expenditure on goods and services produced in the rural non-farm sector would rise more than proportionately than rise in income (both agricultural & non-agricultural) -- thus expanding the market. To this one may add the factor that gradually technical change innovation & adaptation would improve the quality of the goods & services produced; thus eliminating the competition from modern sector products.

We have already made an analysis of the expenditure pattern in the previous section. Drawing lessons from those discussions, we will try to make a projection of the demand situation of the goods and services originating out of GB operations in the subsequent subsections.

6.2 Creation of Demand and Trading

With the rise in income demand for food and non-food items from the market also goes up. A sizeable portion of the GB loanees are involved in trading activities (of both food & non-food items).

A rise in purchase from the market correspondingly pushes up demand for trading services and thus income earning capacity of the GB loanees / Tables 6.1 and 6.2 show the scope of trading in food consumed by the GB members. It has been found that an overwhelming portion (about 87.5 per cent of total) of food

consumed comes from the market. Home produced food meets only a very small part (12.5 per cent of total) of the household demand. More interesting is the fact that fellow GB members supply nearly 60 per cent of total demand for foods traded in the market, leaving the rest to be supplied by the non-members.

Table 6.1

Changes in Demand for Traders Services Generated by the Food Consumption Pattern, 1985

Income groups	Consumption of food per household (Tk/annum)	Value of food consumption produced in the family (Tk/annum)	Per cent of food consumption traded (Tk/annum)
Extreme Poor	7500.0	Nil	100.0
Poor	9400.5	1128.1	88.0
Non-poor	11200.8	2016.1	82.0
All members	10101.0	1262.5	87.5

Source: A Survey on Demand Aspects of GB, GBE[illegible], BI[illegible],1985.

Table 6.2

Share of GB Loanees in Trading of Food Consumed by Loanees Themselves, 1985

Income groups	% of food consumed produced in the family	% of consumed food-traded from GB members	% of consumed food - traded from non-members	Total
Extreme Poor	Nill	74.2	25.8	100.0
Poor	12.0	40.1	59.9	100.0
Non-poor	18.0	42.4	57.6	100.0
All members	12.5	59.1	40.9	100.0

Source: Same as Table: 6.1

An overwhelming majority of the respondents (who either produce goods or trade them) said that purchasers of their goods have increased since they joined GB and most of the new buyers are GB loanees. Although information has not been shown in the tables, a similar, perhaps more encouraging, picture emerges regarding scope of trading in non-food items consumed by the GB members. Earlier study by Hossain (1982) reveal that on average 43 per cent of the non-food items are traded (either sold or bought) by GB loanees and our observations indicate that their proportion increased considerably over time reaching nearly 60 per cent at the time of 1985 survey reflecting increasing specialization in economic activities by GB members.

6.3 Projection of Demand - Estimates of Expenditure Elasticities

In this section an attempt has been made to analyse rigorously the impact of variations in income on expenditure pattern of commodities. The methodology adopted is the conventional econometric estimation of expenditure elasticities and marginal propensities to consume making use cross-section data of household expenditure survey (of GB loanees). Expenditure elasticities give the percentage change in demand for commodity in response to changes in income (or total expenditure) and marginal propensities to consume measure the proportion of incremental income spent on the commodity.

In keeping with the earlier study of Hossain (1982) we specified the two alternative regression equations:

$$C_i = \alpha + \beta_1 \text{Log } Y + \beta_2 F + U \quad \ldots \quad \ldots \quad \ldots \quad (1)$$

$$\text{Log } C_i = \alpha + \beta_1 \text{Log } Y + \beta_2 F + U \quad \ldots \quad \ldots \quad \ldots \quad (ii)$$

where, C_i = Expenditure on the ith commodity by the household.

Y = total expenditure (income) of the household.

F = No. of consumer in the household

U = Stochastic error term

α, β are the parameters to be estimated from the data

We know:

$$MPC_i = \frac{dc_i}{dy} = \text{(marginal propensity to consume)}$$

$$\text{Expenditure Elasticity } E_i = \frac{dc}{dy} / \frac{c}{y}$$

For the specification in equation (i)

$$MPC_i = \frac{dc}{dy} = \beta_1 \frac{1}{y} = \frac{\beta_1}{y} \quad \text{(for mean level of income y)}$$

$$E_i = \frac{dc}{dy} \cdot \frac{Y}{c} = \frac{\beta_1}{y} \cdot \frac{y}{c} \quad \text{(for mean level of consumption c)}$$

For the specification in equation (ii)

$$MPC_i = \frac{dc}{dy} = \beta_1 \left(\frac{c}{y}\right) \quad \text{(for mean level of c and y)}$$

$$E_i = \frac{d \log c_i}{d \log y} = \frac{dc_i}{dy} \cdot \frac{y}{c} = \beta_1$$

Rationale of the Specification

In general for most necessary goods(naturally food items) the marginal consumption proportion (MPC) should decline with the increase in the level of consumption. This is satisfied by semilogarethmic Engel-expenditure function ($C_i = a + \beta_1 \log y$)/d

Here MPC = β_1/y (depdns on income level)

$E_i = \beta_1/C_i$ (declining with rise in C_i)

For most non-necessary goods and services a reasonable assumption is that marginal consumption proportion bears a constant relation to average consumption proportion or in other words expenditure elasticity of demand is constant. This is best captured by doublelogarthmic function of the type $\log C_i = \alpha + \beta_1 \log y$

where $E_i = \beta_1$ (constant)

Thus for food and other necessities a semi-log equation is appropriate while for non-necessities, a double log specification may be appropriate on a priori ground. We however fitted both the equations to the data on expenditure.

The commodity groups (on which expenditure is increased) we have classified for our purposes are: (1) Cereal Food (2) Non-cereal Food (3) Other Daily Necessities (4) Clothing & Household Effects (5) Housing (6) Health, Education & Transport services (7) Investment goods (8) Transfer. A more disaggregated commodity classification would have been desirable

but data limitations & computational difficulties precluded us from doing so. Since the level of consumption of cereal and non-cereal food depends directly on the size of the family, we have measured expenditures on these items in per-capita terms. Expenditure on other groups of commodities have been taken on household term, as they may be independent of the size of household. In any case the household size has been used as an explanatory variable with a view to offset the probable effect of the variations in family size on consumption expenditure.

The estimated values of the regression parameters for the groups of commodities are presented in Table 6.3 and Table 6.4 In general the double log specification gives better results than the semi-log specification. The values of R^2 reflecting explanatory power of the regression equation are consistently higher for double log specification (Table 6.4) than that for semi-log case (Table 6.3). Excepting in the case of housing, health, education transport and transfer expenditure, by and large, the values of R^2 indicate that the models give fairly good fit to the data. The results are on the whole similar to that of Hossain (1982) even though there are some notable differences.

The extimates of co-efficients of income are all statistically significant and have the correctsigns in both the specifications. The only exception being the co-efficients for the two groups of commodities namely housing and transfer

Table 6.3

Regression Co-efficients: Expenditure Functions (1985)

Semi-log Specification (N = 69)

$C_i^i = \alpha + \beta_1 \log Y + \beta_2 F + U$

C_i = expenditure on ith commodity

Y = total expenditure (income) of the hh

F = no. of consumers in the household(hh)

α, β_1, β_2 are Parameters. U is error term

Expenditure on Commodity groups (not reported) C_i	Constant term α	Regression Co-efficients β_1	Regression Co-efficients β_2	R^2
1. Cereal food	6503.9* (431.7)	-123.4* (48.3)		0.42
2. Non-cereal food	3056.1* (309.2)	-240.0* (110.8)		0.49
3. Other daily Necessities	1788.7* (372.8)	140.5* (70.2)		0.31
4. Clothing & House-hold Effects	2403.2* (252.8)	89.2* (34.6)		0.41
5. Housing	873.2* (302.1)	-18.1 (24.2)		0.19
6. Health, Educa-tion & Transport	288.9 (70.8)	04.2 (16.4)		0.07
7. Investment Expenditure	3854.5* (80.8)	-12.1 (9.8)		0.27
8. Transfer Exp.	1061.7 (564.1)	-0.72 (0.8)		0.08

Value within the parentheses are standard error of estimates

* indicate that values of the co-efficients are statistically significant at 5 per cent level of significance

Source: Expenditure Survey of Loanee Households, 1985.

Table 6.4

Regression Co-efficients: Expenditure Functions (1985)

Double-log Specification (N = 69)

Log C_i = [illegible]

C_i = expenditure on the ith commodity

Y = total expenditure (income) of the hh

F = no. of consumers in the hh

[illegible] = regression parameters

U = error term

Expenditure heads commodity groups: log (c_i)	Constant term (not reported)	Regression Coefficient		R^2
1. Cereal food		0.74* (0.03)	2.1* (0.03)	0.58
2. Non-cereal food		1.13* (0.23)	8.23* (0.34)	0.62
3. Other daily necessities		1.42* (0.31)	-3.8* (0.81)	0.52
4. Clothing & Household Effects		1.61* (0.41)	-9.18* (0.7)	0.54
5. Housing		1.18 (0.67)	-1.09* (0.05)	0.19
6. Health, Education & Transport		0.88 (0.43)	-3.21 (3.34)	0.11
7. Investment expenditure		2.21* (0.52)	-0.81 (0.50)	0.44
8. Transfers Expenditure		4.1 (8.6)	19.21 (31.2)	0.07

Values within the parentheses indicate standard errors of estimate

* indicate that the value of the co-efficients are statistically significant at 5% level of significance

Source: Expenditure Survey of Loanee Households 1985.

expenditure. Transfer expenditure, however, mostly transotory immature and has no necessary relationship with income level. Data deficiency and lack of proper coverage may partly explain the statistically insignificant value of the β_1 co-efficient in case of expenditure on housing services.

In many cases the co-efficients of household size are negative. For food items this perhaps is attributable to the fact that expenditure on food are measured on per-capita terms, and expenditure on these commodities increase less than proportionately with the increase in number of family member. Positive values, on the contrary indicate that expenditure on these items increases more than proportionately with the rise in household size.

For some group of commodities, the β_2 co-efficients are statistically insignificant indicating that, household size is not a relevant explanatory variable in those cases.

The expenditure functions specified earlier (double log and semi log or both) for our estimation exercise doesnot have the desorable property that sum of the MPC_i for each commodity does not add up to one. Moreover, they do not allow for the variation of the marginal budget share for the ith commodity group at different levels of income. Researchers now a days prefer a more flexible Engel function of the following type to deal with the cross-section data.

$E_i = \alpha_i + \beta_i E + \gamma_i E \log E + \mu_i \log F + \lambda_i F \log E$

where E is the income of the household, E_i is the amount of expenditure going to the ith sector and F is the size of the household. This is a nonlinear function which allow for variation in marginal budget share for the ith sector MBS_i at different levels of income, which can be derived as fallows

$MBS_i = \frac{dE_i}{dE} = \beta_i + \gamma_i (1 + \log E) + \lambda_i \log F$

The function is convene when γ_i o but convene when γ_i o The size of the family would have an important bearing on the economic position of the household at a given level of income and here included as a explanatory variable in the equition

For actual estimation purpose, sometime the following form is adopted with a view to avoid the problem of heterosecdosticily - (since variability in E_i increases with the explanatory variable E).

$S_i = \beta_i + \gamma_i \log E + \mu_i \log F/E + \lambda_i \log E$

where $S_i = E_i/E$ is the share of the expenditure of sector i in total income E and at is derived from the earlier equition. It has the advantage that it ensures that the saum of the marginal budget shares is equal to unity. Expenditure elasticity here is the ratis of marginal over the average budget share.

Since per capita income is a better measure of the economic standing of a household, as compared to the household income, the income variable has been measured in this form. In addition family size (F) has also been included so that the model permits family size to influence both the intercept and the shape of the individual Engel functions.

6.4 Emperical Findings -- Estimates of Expenditure Elasticities and MPCs

Table 6.5 presents the actual magnitudes of expenditure elasticities and MPCs estimated from the model. The information furnished clearly reveal that except for the case of cereal food and health, education & transport, the magnitudes of expenditure elasticities is greater than unity indicating the elastic nature of the demand for these commodities. The corresponding MPCs for these group of commodities are also reasonably high reflecting the fact that a significant proportion of incremental income tends to be spent on these non-farm products. Perhaps most significant of the empirical result is the very high value of expenditure elasticity for investment goods in both the specifications. This is a very engouraging evidence showing great indication of the GB households to acquire fixed productive assets out of their incremental income. This is what that is likely to lead to sustained rise in income in the years to come.

Table 6.5

Values of Expenditure Elasticities and Marginal Propensity to consume, 1985

Commodity Groups	Expenditure Elasticity		Marginal Propensity to Consume	
	Semi-log equation	Double-log equation	Semi-log equation	Double -log equation
1. Cereal food	0.78	0.74	0.36	0.34
2. Non-cereal food	1.09	1.13	0.17	0.17
3. Other Daily Necessities	1.31	1.42	0.09	0.11
4. Clothing & Household effects	1.50	1.61	0.13	0.14
5. Housing*	1.09**	1.17**	0.05	0.05
6. Health, Education & Transport	0.69	0.83	0.016	0.02
7. Investment Exp.	1.59	2.41	0.21	0.32
8. Transfers* Exp.	2.43**	4.10**	0.058	0.10

** Statistically insignificant at 5% level of significance

Source: Tables 6.3 and 6.4

Note: It should be noted that sum of the MPC_i in table 6.5 does not addup to one. Theoretically this is inconsistent. This has been due to the choice of estimating equation. Researchers now generally use a more flexible form where $\sum MPC_i = I$

Comparative Picture: Results of 1982 and 1985 Studies

Table 6.6 compares the magnitudes of expenditure elasticities (and MPCs) obtained from our 1985 study with that of Hossain (1982). Both studies indicate that a significant proportion of incremental income is spent on non-farm goods. The table also reveals that for most product groups (e.g. non-cereal food, other daily necessities, clothing & household effects, & investment goods) the elasticity measures are on the increase over time which is rather encouraging from the demand point of view.

Implications of the Study Results

Using the empirical estimates, commodities can be classified into the following groups according to the nature of demand for them:

A Inelastic Demand ($E_i < 1$)

Cereal Food:

Rice, flour, bread, biscuits.

Health Education & Transport:

Medicine, doctor's fee, books, papers, pencils, ink, school fees, transport services: rickshaw, bullock cart

B. Elastic Demand ($1.0 < E_i < 1.5$)

Non-cereal Food:

Pulses, potato, other root crops, vegetables, chillies, onion, fish, meat, egg, dried fish, milk and milk products, and fruits.

Table 6.6

Values of Expenditure Elasticities and MPCs 1982 and 1985

Commodity groups	Expenditure Elasticities				Marginal Propensities to Consume			
	Semi-log equation		Double-log equation		Semi-log equation		Double-log equation	
	1982	1985	1982	1985	1982	1985	1982	1985
1. Cereal food	0.72	0.78	0.78	0.74	0.37	0.36	0.41	0.34
2. Non-cereal food	1.08	1.09	1.11	1.15	0.20	0.17	0.21	0.17
3. Other Daily Necessities	0.91	1.31	0.92	1.42	0.13	0.09	0.12	0.11
4. Clothing & Household effects	1.43	1.50	1.48	1.61	0.17	0.13	0.18	1.4
5. Housing	1.63	1.09	1.45	1.17	0.06	0.05	0.05	0.05
6. Health, Education & Transport	n.a.	0.69	n.a.	0.88	n.a.	0.016	n.a.	0.02
7. Investment expenditure	1.54	1.58	2.36	2.41	0.07	0.21	0.12	0.32
Transfers	n.a.	2.43	n.a.	4.10	n.a.	0.058	n.a.	0.10

Source: 1) Hossain M (1984): Based on expenditure Survey, 1982

2) Expenditure Survey of Loanee Households, 1985

Other Daily Necessities:

Oils, bidi, cigarettes, betel leafs, betel nuts, tobacco, kerosine matches, fuel, soap, soda etc.

Housing Materials:

Rope, bricks, tile, tin, straw, bamboo, wooden fixtures, logs, cements, nails.

C. High Elastic Demand: ($E_i > 1.5$)

Clothing and Household Effects:

Sari, lungi, piece cloth, ready made garments, hosiery goods, second hand cloth, shoe, footwear, bedding materials, furniture, utensils, mats, blacksmith products, durable consumer goods.

Investment Goods:

Draft animals, milch cows, agricultural implements, cow shed, stores, cart, boat, bicycles, rickshaw, industrial machinery, industrial tools & equipments, weaving machines, handlooms, fishing nets.

Against the backdrop of this picture on the demand side we place below the list of major economic activities financed by the GB in the following:

1. Paddy & pulse husking (A)
2. Milch cow raising (C)
3. Bull & cow fattening (C)
4. Handloom weaving (C)

5. Cane & bamboo works (B, C)
6. Peddling ( )
7. Tailoring (C)
8. Mat making (C)
9. Fish net making (B)
10. Oil pressing (B)
11. Goat and poultry raising (B)
12. Gur (molasses) making (B)
13. Other cottage industries (C)
14. Rickshaw transport (C)
15. Cart transport (C)

Trading Activities -- (B or C)

16. Paddy, rice & pulse trading
17. Grocery & stationary shops
18. Seasonal crops trading
19. Cattle & goat trading
20. Handloom products trading
21. Wood & timber trading
22. Gur trading
23. Fish trading
24. Vegetables trading
25. Betel leaves & nuts trading
26. Flour trading.

N.B. The symbos A, B and C indicate the goods (or services(which possess inelastic demand, ($E_i < 1$), elastic demand ($1.0 < E_i < 1.5$) and high elastic demand ($E_i > 1.5$) respectively. Trading activities in general have elastic demand $E_i > 1.0$.

The list of economic activities financed out of GB credit just presented is pretty exhaustive. It is evident from the information furnished that most of these products & service have elastic demand. For some products & services, as income grows, the potential for expansion of market is very high. For trading activities, the demand for trade services is almost certain to expand at a much faster rate than the demand for the goods concerned -- with increasing specialization and expansion of markets. This is already borne out by the evidence on scope of trading in food (cereal food products have inelastic demand). Admittedly however the GB loanees may not be the only source of supply of these goods and services. Products produced outside the traditional rural sector, in some cases, even imported substitutes may begin competing with this traditional source of supply.

We however did not make any attempt to study the substitution possibilities of the goods & services. But a similar study on rural industries products by Osmani & Deb (1984)[7] throws some useful light on this problem. Table 6.7 present a comparison of competing products for major commodity groups -- the competing supplying sectors being rural industries and modern industries (or imports) (substitutes). In this table they have also calculated the income elasticities of demand and marginal budget shares for the richest 10 per cent of the households with a view to analyze the impact of competition with substitute products at a very high level of income. Several interesting findings emerge from the table.

Table 6.7

Income Elasticity of Demand and Marginal Budget Shares of Rural Industrial Products by Major Commodity Groups

Commodity Groups	All Rural Households				Top 10% of Households			
	Elasticity		Marginal Budget Shares (%)		Elasticity		Marginal Budget Shares (%)	
	Rural	Substi-tutes	Rural	Substi-tutes	Rural	Substi-tutes	Rural	Substi-tutes
1. Consumer Goods	1.19	1.40	14.01	5.88	1.29	1.35	15.50	6.74
i) Non-cereal food	1.22	1.61	7.32	2.30	1.50	2.22	10.00	4.19
ii) Clothing	1.19	1.00	4.78	1.72	1.14	0.96	4.78	1.72
iii) Household goods	1.18	1.70	1.43	1.72	0.61	1.02	0.71	1.84
2. Intermediate goods	3.51	2.58	1.87	0.30	6.17	-	4.92	-
3. Capital goods	0.95	3.29	0.64	0.05	0.71	-	0.52	-
4. All groups combined	1.26	1.50	15.25	6.45	1.55	1.25	20.92	6.45

Source: BIDS - Income - Expenditure Employment Study in Osmani S.R. & Deb N.C. (1984): Demand for Rural Industry Products in Bangladesh.

First, at the average income level of all rural households, the elasticity of demand for all rural industry products (1.26). is greater than unity signifying a highly elastic demand. The substitute products possess even higher elasticity (1.5). But the marginal budget shares of rural industry products is more than double the shares of substitutes -- implying that substitute is not likely to pose a serious threat within a considerable range of income growth. As a matter of fact, for the richest 10 per cent of households, the marginal budget share of substitutes seems to remain constant while that of rural industry products tends to rise.

Secondly, the overall dominance of rural industrial products arises essentially from the dominance of rural consumer goods over their substitutes. This is essentially true for non-cereal food items & handloom clothing and this dominance is maintained even at very high levels of income. The substitute foods enjoy a higher elasticity of demand, but their relative share in the incremental budget does'nt rise much as one moves up the income scale.

Finally, among the consumer good households goods sector clearly favours the substitutes in terms of both elasticity and marginal budget shares at both average and high levels of income.

The results of this study (originating from BIDS's Income Expenditure Employment Study) along with our one gives us reason for both optimisim and caution regarding future efficiency of GB credit operations. The optimism arises from the evidence that market for most of the products originating from GB financed

sectors is not yet saturated and may even be expanding. The reason for caution emanats from the fact that in the foreseeable future, the situation may not persist in the face of increasing competition from substitutes produced in the modern sector, unless measures are taken to improve the techniques of production and quality of goods. The studies are partial in nature and empirical estimates of elasticities may have little relevance in face of rapid changes in rural and urban economic structure.

7. SUMMARY AND CONCLUSION

7.1 GB operations have made substantial impact on the level of income of the loanees. On an average, a GB member was found to have nearly 15 per cent higher per capita income than the comparable non-members of the project villages and 33 per cent higher than the similar households of the control villages.

7.2 The per capita income of GB loanees has enhanced over time. Compared to 1982 study, the per capita income of an average GB loanee was found to be about 59 per cent higher in 1985.

7.3 The level of income of GB loanees was seen to vary directly with the size of the loan and the number of times of loan disbursement.

7.4 Sources of growth in the level of income of GB loanees included a number of factors. GB operations appeared to have made positive impacts on the wage and employment

situation of the poor, enhanced the level of their capital accumulation, substituted private loans with GB loans and reduced unproductive expenditure by making people more conscious.

7.5 Even though 60 per cent of the total expenditure still goes into the food items, there has been a substantial rise in the level of productive investment by GB members in addition to raising the level of expenditure on Non-food Basic Needs items. All these have created an opportunity for an increased productive capacity of the targeted population.

7.6 Increase in the level of income of the rural poor has set in motion certain forces which have been creating enhanced demand for the goods and services created out of GB credit financed activities.

7.7 However it must be remembered that apart from the household demand in the rural areas, the demand for the cottage industry product and services may also originate from urban sector. Moreover, we also need to consider forward linkages (demand for the industries using these products as inputs) as well as export demand.

But there is little empirical evidence on these sources of demand and far less on their future potentials. A very casual empiricism suggests that handloom products (specially sari and lungi) as well as some food products (such as 'gur') have an urban market. Some specialized handicrafts products may also have an

export market. But nothing could be said about the magnitudes or elasticities of such demand.

Our study has looked at the potential of GB financed activities from the point of view of demand. Any policy suggestion must be based on comprehensive review of constraints operating on both demand and supply side. This, however, is beyond the scope of the present paper. Nevertheless, we can derive some general policy implications from the preceding analysis.

First, the demand constraint emanating from the low income of the rural people suggest that non-farm sector can not be viewed as an alternative to agricultural growth. At the stage of our economic development the huge surplus labour in rural sector can't be possibly absorbed in rural non-farm sector. More importantly the growth of this sector can hardly be sustained in the face of lagging agricultural growth.

Secondly, we have in our analysis considered only those activities which are currently being financed by GB credit. No doubt huge potential exists to finance relatively large scale economic activities to produce goods that are currently being supplied by the urban or foreign sector. Related to this is the fact that great potential exists in creating forward linkages specifically with modern agricultural technology. For instances GB can finance rural industries producing tools, equipments and implements required for crop production and processing. However a very careful review of technical, institutional and organisational possibilities must precede before embarking on such a policy package.

Notes and References

1. The target group of GB credit include persons belonging to households owning upto half an acre of land. Total value of assets owned by a prospective GB loanee whould not exceed the value of an acre of land normally in practice in the locality, maximum limit being Tk. 20,000/-

2. See Hossain, M, 1982, Credit for the Rural Poor: the Grameen Bank in Bangladesh, Research Monograph No. 4, BIDS.

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6. Rahman, Atiur, 1986: 'Impact of Grameen Bank on the nutritional status of the rural poor', Working Paper No. 7, Grameen Bank Evaluation Project, BIDS, October, 1986.

7. Osmani SR and Deb NC, 1984: 'Demand for Rural Industry Products in Bangladesh' (Preliminary Draft), BIDS, Dhaka/ARTEP, ILO, Bangkok.